The Citrus Industry

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The 1951-52 citrus season for Florida growers is just about to close, with the opening of the 1952-53 season just around the corner. The season just closing has been fraught with many and conflicting problems for Florida citrus growers but, on the whole, has been better than at times seemed to be in prospect, and is closing with the market fairly active at prices which leave a margin of profit for the producers. Growers generally are looking forward with hopefulness to the season about to open.

The new season will open with several new members on the Florida Citrus Commission and with some change of faces in the directorate of Florida Citrus Mutual, the state's great citrus cooperative, but both bodies are expected to continue their activities for the industry as a whole—possibly with even greater aggressiveness. With the prospect for a good crop of quality fruit, the outlook for the coming season is considered promising.

This Month

Vol. 33, No. 6 Bartow, Florida June, 1952

PARATHION

PARATHION... the one insecticide for many pests... offers you all these advantages:

AMERICAN Cyanamid COMPANY

Citrus Insect Control For June, 1952

W. L. THOMPSON AND R. M. PRATT*
FLORIDA CITRUS EXPERIMENT STATION, LAKE ALFRED

Purple scale infestations on spring foliage are not yet high, but the average infestation on old leaves is unusually heavy. The summer hatch is just beginning and a substantial movement of young scales on to new leaves is to be expected. It will probably be the middle of June before most of the eggs will have hatched and the majority of the scales will be in young stages.

There has been a considerable reduction in red scale in recent weeks, but the level of infestation is still higher than it was a year ago and many more groves are infested. A new hatch is expected to begin in the near future, which will result in a substantial increase in infestation.

The average purple mite infestation has increased from 9½ percent in the last week in April to 17 percent in the third week in May. The population can be expected to start declining some time in June. A number of groves are very heavily infested.

Rust mite populations declined through February, March and April, but have been increasing in May. Serious damage from early russeting may result if rust mites are allowed to build up during May and June.

Six-spotted mites have been increasing, especially in the northern part of the Ridge District, but the peak for the season has about been reached and little further injury is expected.

Mealybug infestations on young fruit are increasing, especially along the east coast. Some reports of fruit drop caused by this pest have been received. Many of the insects are under the buttons where they are hard to reach with sprays.

Whiteflies in the larval and pupal stages are increasing, so a peak of emergence and egg laying may be expected about the second week in June.

Spray Programs

June is usually the month when the scale program is started. However, treatments should not be started too soon unless heavy infestation of scale or mealybugs exist. In some groves the oranges will not reach 1¼ to 1½ inches in diameter before the middle of June, so oil sprays should be delayed until it is safe to apply them; however, parathion can be applied at any time as far as fruit size is concerned. Timing is important for satisfactory control so time the spray for the insect that is most important in your grove.

Scale Control: Where red scale infestations are heavy, time the scalicide so as to apply it after the peak of crawlers or when there is a high percentage of young stages. It is also desirable to apply the scalicide when there is a high percentage of young purple scale stages, but if both species are present, time the application for red scale. In groves where either oil or parathion was applied during the post-bloom period, resulting in low scale infestations, it may be desirable to delay the summer spray until mid-July. If parathion is being used the spray can be delayed even until late July or into August. If the spray is delayed until late summer, it may be expected to control the scale through the fall of the year.

Mealybugs: The next brood of mealybugs is likely to occur around the first part of June. This brood will scatter from under the buttons and settle over the tree on leaves, on fruit stems and between fruit that are hanging in clusters. Where mealybugs are a problem it will probably be advisable to apply a parathion spray at 1½ to 1 2/3 pounds per 100 gallons in early June. Oil sprays will reduce the infestation but they are not very effective. The most effective control will be obtained where the treatment is made during the first part of June or before the mealybugs collect in masses. Thorough applications are neccessary for satisfactory control.

Whiteflies: Whiteflies will either be in the pupal stage or just emerging as adults the first part of June. The pupal stages are very difficult to kill with either oil or parathion. For the most effective whitefly control apply oil or parathion after the eggs have been deposited. The eggs will be deposited on the most recent growth. If the whitefly is effectively controlled in late June, then there should be very little sooty mold on the leaves during the latter part of the summer.

Purple Mites: Where oil emulsions are used for scale control the purple mites will also be controlled. A combination of about 3 quarts of oil emulsion plus 12 to 16 ounces of parathion per 100 gallons has been giving

(Continued on page 8)

*Written May 24, 1952. Reports of surveys by Harold Holtsberg, Cocoa; J. W. Davis, Tavares; K. G. Townsend, Tampa; J. B. Weeks, Avon Park; and T. B. Hallam, Lake Alfred.

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Effect Of Various Treatments Of Decay In Tangerines

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SCIENTIFIC AID

This is the first installment of a recent report of the Bureau of Plant Industry on decay in tangerines. The report is of such great interest to both growers and shippers of tangerines that it is being reproduced in these columns for the benefit of readers. Future installments will appear in successive issues of this publication.—Editor.

Effect of Packing-House Treatments, Temperatures in Transit and Containers On Decay in Tangerines

Introduction

Although tangerines have been grown throughout the citrus belt of Florida for well over half a century, few, if any publications based on concrete evidence have been issued to shippers of this fruit for their guidance in the selection of the most feasible decay inhibitors and protective service during the transit period. Yet it is common knowledge that the tangerine, a very tender fruit, is easily bruised when ripe and is especially susceptible to green mold decay during the marketing period. Recognizing the dearth of information on the handling and transportation of tangerines, the Florida Tangerine Cooperative, formed in the 1950-51 season to extend the market for this fruit, requested the Bureau of Plant Industry, Soils and Agricultural Engineering to conduct holding and shipping tests with tangerines for the purpose of:

1. Appraising the value of the decay inhibitors presently available to shippers, and
2. Comparing the different in-transit protective services used in rail shipments.

This report, based for the most part on tests conducted during the season of 1950-51, also includes a few holding and shipping tests conducted previously but not heretofore reported to the industry as a whole. The holding tests were planned to determine the rate of decay development as influenced by:

1. Low temperatures,
2. Decay inhibitors applied before the fruit is packed,
3. Crate liners or cartons treated with diphenyl, a compound that slowly gives off fumes which check the growth of a wide range of rot producing fungi.

Materials and Methods

The fruit used in evaluating antiseptic dips was obtained from packing-houses either immediately after the commercial application of wax emulsion containing a decay inhibitor, or before it was given any treatment. The latter samples were brought to the laboratory in Orlando, passed over a miniature washer, inspected, and only the fruit badly damaged in harvesting was removed before the decay inhibitor was applied.

A fairly large number of holding tests were made at Orlando in which commercially graded and packed fruit was used. This fruit was packed in wirebound crates or in cartons treated with diphenyl, a decay inhibitor. These collections were selected at random from a rather large number of packinghouses and should therefore be representative of fruit going to market at that time, hence they contained their share of bruised or "puffy" fruit. While some were held continuously in a 70 degree F. holding room with a relative humidity ranging from 88 percent to 92 percent, others were held for varying lengths of time at 38 or 50 degrees at a relative humidity of about 90 percent and then transferred to the 70 degree holding room. At the first inspection, the fruit was removed

from its original container (if carton or wirebound crates, inspected and placed in a small field lug for future inspection. The time interval between setting up the tests and making the first inspection varied from five to ten days to simulate transit periods, a second inspection was made three days later when possible, and the final inspection was made one week after removal from the refrigerated rooms.

The shipping tests were made with loads going to market under normal conditions of handling and transportation. The shipping tests were planned to show the comparative rate of cooling obtained from the contrasted protective services and the amount of decay that may be expected to develop during and after the transit period. They also included shipping tests with fiberboard cartons as a partial load with standard nailed crates and diphenyl-treated crate liners and blankets in wirebound crates in comparison with similar fruit packed naked in such crates and loaded in the same car. The test packages were representative samples of the lading and except where noted were placed along the center line of the car at the bottom bunker, middle quarterlength, and top quarterlength positions of the car. At time of packing, a small recording thermometer was placed in the center of each test package in order to obtain a continuous record of temperatures at each level in the car during the transit period. The fruit in the test crates was from the same grove and was strictly comparable. It was examined critically at time of unloading and whenever possible a general inspection of the load was made. In the shipments to New York or Chicago the test packages were held after arrival at room temperature and relatively low humidity for a week and then a final inspection was made.

HOLDING TESTS IN FLORIDA

Effect of Unpacking Fruit While Wet On Decay

There is a popular belief among friut-men that citrus fruits should not be unpacked while wet with condensed moistures such as occurs when cold fruit is unloaded from cars or transferred from a cold room to a warm one. It is claimed by the industry that handling at such times bruises tangerines and accelerates development of decay.

In order to obtain evidence on this point, one crate of commercially-packed tangerines was stored at 70 degrees F. and two were stored at 38 degrees. After five days all three crates were inspected and then all were stored at 70 degrees for 7 more days after which they were inspected a second time. At the first inspection one of the crates from the 38 degrees room was inspected immediately while the fruit was still wet with water of condensation while the other was not inspected until the fruit had become dry.

Less than 2 percent rind breakdown developed in any crate. In the crates held continuously at 70 degrees F., there was 10 percent decay, mostly green mold, after five days, and 27.1 percent decay after seven more days. There was only .2 percent decay in the lots that were stored five days at 38 degrees at the first inspection, but after holding one week at 70 degrees, decay had increased to 28.6 percent in the boxes that were inspected the first time while the fruit was wet, and 24.8 percent in the lots that were dried before being inspected the first time, a difference of 3.8 percent. This difference was small and not consistent enough between treatments to be statistically significant. What appeared important from a practical standpoint was that approximately the same amount of decay, largely green mold, was found in all treatments after holding one week at 70 degrees which indicated that the effect of refrigeration at 38 degrees for five days was lost soon after the tangerines were moved to a warm room.

Stem-end rot was beginning to show up in moderate quantity at the end of the 7 days holding period.

Time and Temperature in Relation To Decay

A series of eight holding tests simulating transit periods made in which commercially graded and packed U. S. No. 1 tangerines were stored at 38 degrees for five and ten days respectively, and then transferred to a 70 degrees holding room for one week. For comparison, a like number of lots were held continuously at 70 degrees. At the first inspection there was 2.1 percent rind breakdown in the fruit held at 70 degrees F. and 1.4 percent and 0.9 percent in that held for five and ten days respectively at 38 degrees.

In the lots held at 70 degrees continuously, 13. plus percent rot developed in five days, and one week later it had increased to 34.1 percent. In the lots stored at 38° for five and ten days, there was only 0.3 and 0.5 percent decay at the first inspection, but during the following week at 70°, all decay had increased to about the same amount as in those held continuously at 70°. In a few individual crates in each grouping there was more than 50 percent decay, largely green mold, at the second inspection which indicated a wide difference in keeping quality of commercially packed tangerines, and that the retarding effect of low temperatures on decay had disappeared within a week after transferring the fruit to room temperature.

Rate of Spoilage After Removal To Room Temperatures

Inasmuch as it has been shown that tangerines will not keep a week after removal to room temperature from a simulated refrigerated shipment, a series of 6 holding tests was made in which the second inspection was made after 3 days at 70° F. instead of 7 days, to see if the fruit would keep 3 days at room temperature. A third inspection was made 4 days after the second. In the fruit held continuously at 70°, 16.5 percent decay had developed in five days, 27.8 percent three days later, and 40.1 percent in another four days.

There was 0.4 percent decay after simulated shipment for five days at 38° F., only 8.3 percent three days after removal to the 70° holding room, but after seven days at 70° there was 24.4 percent which is approximately the same as in the fruit continuously at 70°. Development of decay in the lots held for a ten day simulated shipping period at 38°, was similar to that in the lots held at 38° for 5 days. Again a very large proportion of the rot was caused by green mold. It was shown by these tests that decay in 3 days was only about one-fourth or one-fifth as extensive as it was 7 days after removal from cool temperatures. It would appear that good refrigeration in transit and prompt use of tangerines within a few days after arrival would be desirable.

Effect of Wirebound Crates and Diphenyl-Treated Cartons On Decay

It is generally recognized that low temperatures inhibit decay so long as the commodity is under refrigeration and that spoilage may develop soon after the commodity is brought to room temperature. Therefore it seemed desirable to explore the merits of chemical decay inhibitors such as diphenyl, that slowly volatize from treated wrapping tissues or paper liners in the shipping package. Diphenyl has been effective in retarding decay in oranges when im-

(Continued on page 13)

Florida Citrus Mutual

N. F. LAVIGNE
PRESS RELATIONS

(This is the second in a series of articles dealing with the organization, accomplishments and plans of Florida's supercooperative organization, now entering on its fourth year of activity.—Editor)

To put down in dollars and cents what Florida Citrus Mutual has been worth to the industry in its three years of operation is, of course, impossible.

Neither is it possible to put a specific dollar value on the advertising of the Florida Citrus Commission nor the grade and size regulations under the Federal Citrus Marketing Agreement.

About all that can be done is to draw comparisons of what happened in pre-Mutual seasons and what happened under similar circumstances since Mutual has been in the picture.

Those of us who have literally "lived" with Mutual since it gained the right to speak for its 7,000 members know that it has done an outstanding job and that it has meant millions upon millions of extra dollars to the citrus growers of the state. The non-member has enjoyed these benefits too, because Mutual couldn't help its own members without at the same time helping everybody else.

Only a few specific instances will be mentioned in this article. We do not believe any fair and impartial person can dispute the conclusions.

Mutual did not wait to come into operational existence before doing its first good deed. It was still struggling to get the few more growers and acreage it had to have to hit the 75% tonnage requirement set as a minimum before it would become an operating agency. This was in the early part of 1949.

Prices had been in the doldrums all season when, all of a sudden, devastating cold weather struck California. The fresh fruit market soared almost overnight and, spurred by the fancy prices being offered, Florida shippers really went to town.

Everybody knew there was a place for every orange in Florida, with California practically wiped out, yet Florida shippers rolled fruit to market in such huge volume that the price sagged under the load. It began to look as though Florida would throw away this opportunity to get the return for its fruit which had been created by cold weather in a competitive state.

Mutual stepped in and asked the Florida Citrus Commission to set up a spacing program to control shipments. The plan worked and with fruit going out in orderly and reasonable volume, prices went back up and growers enjoyed the first good returns they had received since the postwar slump.

There is no way of putting a definite dollars and cents value to this particular effort instituted by Mutual. Perhaps the Commission would have put in a prorating program anyway, but the fact remains Mutual proposed it and it worked beautifully, adding millions of dollars to the state's citrus income.

The following fall when the 1949-50 crop started moving, Mutual again had the opportunity to do something which meant millions of extra dollars and this time it was the only agency which could have acted.

The first fruit going to market each season always brings high prices and shippers always try to get that high dollar. No one can blame them for that. But this same effort usually resulted in too much fruit being shipped and a collapse in price. Slowly at first and then faster and faster, prices would drop as the market became loaded and then overloaded, until they were down where they meant red ink.

The same thing loomed in the fall of 1949 when Mutual stepped in with a set of floor prices and took the steam out of the collapses in prices. True, prices did go down to that floor but, contrary to what had always happened in previous seasons, they did not go to the red ink level.

A graph of prices for that season will show a level line somewhere between 25c and 50c a box above where it had gone in previous years. One newspaperman who had "covered" Florida citrus for a dozen years up to that time said this action had made at least $10,000,000 for the grower. No one ever disputed that statement.

Probably Mutual's most spectacular single act and, by the same token probably its most profitable for the industry, came in the spring of 1950 when prices again threatened to collapse completely as concentrators found they could not sell their product in volume and pay $3 and $3.50 a box for oranges.

It has been one of the most fantastically prosperous periods in the entire history of the industry. It was one of those story book things which can happen but are hard to believe even when they do.

Then, all of a sudden, concentrators decided they had been wrong about how much the housewife would pay for frozen concentrate and announced they would be forced to cut their prices for raw fruit. From $3.50, the price dropped overnight to $3, then $2.75 and $2.50.

Many large buyers, including old established fresh fruit and processing companies, had contracted for orange crops at $2.50 and stood to lose millions if the price went lower than that. The price they could get for their finished product would be dictated by what their competitors would quote and they knew only too well that these quotations would reflect the going price of fruit, regardless of the level.

And they also knew that they would have to meet such prices but still pay $2.50 for the raw fruit.

Mutual acceded to the urgent and desperate request of the industry and set a floor price of $2.50. With industry support, the price held. This one action alone staved off possible bankruptcy or at least tremendous losses to many firms which had been caught in the squeeze.

The season went along smoothly after that and the growers made many extra millions of dollars. If Mutual had not been around to take a hand in things, prices probably would have gone down at least another 50c a box and possibly even more.

These instances are only those which made the headlines, yet Mutual performs many other services in its day-to-day operations designed to help the grower get the full value of his crops.

It operates a comprehensive informational service designed to keep the grower, shipper and processor fully abreast at all times of what is happening and why. There can be no question but what the Mutual grower member today is better informed on prices and marketing conditions than ever before.

(ontinued on Page 12)

Performance Of The "Volute" Attachment For The Speed Sprayer

C. R. STEARNS, JR.
FLORIDA CITRUS EXPERIMENT STATION, LAKE ALFRED

The use of the so-called "oil head" for single side delivery of scalicide sprays reduces the total air output of the Speed Sprayer particularly in the upper part of the air outlet. In order to overcome this deficiency the Speed Sprayer Company designed an attachment for the sprayer which would improve the efficiency of the sprayer in delivering spray materials to the top portions of our large citrus trees. They named this attachment a "Volute."

An experiment was designed to compare the "Volute" with the "oil head." A grove of grapefruit trees which averaged between 25 and 28 ft. in height was selected for this work. Most of the trees had been hedged back so that the spray middles had about 10 ft. between the limbs and foliage of trees in adjacent rows. In one area of the grove there were several rows which had not been hedged. Two Speed Sprayers, one with the 'oil head" the other with the "Volute" were operated at the same time in different parts of the grove. Twenty gallons of spray material containing 10 lbs. of wettable sulfur and 2/3 lb. DN Dry Mix per 100 gallons were applied to each tree at 1¼ miles per hour.

As soon as the spray had dried four random samples were collected from tops of four trees of approximately the same height and conformity. Samples were thus obtained: from hedged trees sprayed with the "oil head," from hedged trees sprayed with the "Volute," and from unhedged trees sprayed with the "Volute," Sulfur determinations calculated as micrograms (mcg.) of sulfur per square centimeter were made for each sample to determine deposition.

[1]The author wishes to express his appreciation for the cooperation and assistance of Mr. A. C. Mathias, Production Manager, Haines City Citrus Growers Association.

Results

The deposit measurements, shown in Table 1, indicate that more material is deposited in top portions of the trees with the "Volute" than with the "oil head." This is true even where the "Volute" was compared in unhedged trees with the "oil head" in hedged trees. Correct regulation of the deflector plates controlling the top air outlet is necessary for best coverage.

Additional tests made in some groves sprayed with the "Volute" as compared with some groves sprayed with "oil head" showed an increase of 10% to 20% more sulfur in the top portions of the trees. These comparisons were not made in the same groves but in groves having trees of similar size and foliage cantour.

Observation of the tops of sprayed trees showed that the "Volute" gave a more uniform deposit particularly on the lower leaf surfaces. The better deposit obtained with the "Volute" was especially noted in the tops of unhedged trees which are very difficult to spray with the "oil head."

TABLE 1.

Increase in Deposition of Sulfur in Tops of Large Grapefruit Trees in Same Grove by Use of the Volute Aattachment on Speed Sprayer.

Type of Spray Head	Foliage of Tree	Mcg. Sulfur/cm² in Top of Trees	Percent Increase by Use of Volute
Oil Head	Hedged	26	
Volute	Hedged	32	8
Volute	Not Hedged	28	23

Conclusions

The use of the "Volute" can lead to better coverage in the top portions of trees than is obtained with the "oil head." The greatest increase will be found in groves which have been hedged. In general, an increase in deposit of 8% to 23% can be attained by proper operation of the "Volute."

CITRUS INSECT CONTROL FOR JUNE 1952

(Continued from page 3)

very good purple mite and scale control. Where light infestations exist use the 12 ounce dosage and for the heavy infestations of scale use one pound. If it is not desirable to use oil or parathion, then either Ovotran or Neotran can be used with wettable sulphur.

Rust Mites: In groves that have not had a sulphur application for a month to six weeks, inspections should be made every two weeks, especially where oil emulsions were used during the post-bloom spray. Rust mites usually increase very rapidly in June and early July. Make a very thorough application of sulphur spray or dust for most satisfactory control. Space the sulfur spray far enough ahead so that it will not be necessary follow within two or three weeks with an oil spray. However, if heavy rains occur the sulfur will be washed off and oil may be used sooner.

Timely Suggestions: Scale infestations are heavy so, slow that sprayer down for thorough coverage. Don't be in too much of a hurry to start spraying early in June unless mealybugs are present in the groves. Have blood tests made of all your men before starting the extended spray operations with parathion.

Consult the 1952 'Better Fruit Program" for detailed instructions on dilutions and spray combinations or the Citrus Experiment Stations at Lake Alfred or Fort Pierce.

Rutledge To Succeed Sauerman As Manager

In a surprise move, Florida Citrus Mutual on May 21 announced the appointment of Robert W. Rutledge, executive director of the United Growers and Shippers Association, Orlando, as general manager of Mutual, succeeding A. Vernon Sauerman, who has held the position for the past two years.

Rutledge will take over as general manager on September 1, in the meantime, beginning June 1, acting as assistant to General Manager Sauerman, who long has sought to retire. He has been a prime mover in the "sell-it-by-the-pound" idea, now being conducted in Memphis and Louisville.

In making the announcement of the change of management, Lacy G. Thomas, Groveland, president of Mutual, paid high tribute to the retiring manager and predicted continued aggressive activity on the part of his successor.

The Story of The Florida Citrus Commission

RICHARD W. MULVILLE
TRADE RELATIONS MANAGER

Part II: The War Years

The War Years, 1940 through 1945, brought many problems to the Florida citrus industry. As it had in its first five years of existence, the Florida Citrus Commission assumed a leading role in representing the industry in dealings with outside agencies, particularly the federal government.

With the mushrooming growth of the armed forces, and the great need for foodstuffs to keep the nation healthy during the trying war period, the Florida citrus industry was called upon to keep a steady stream of its citrus products flowing into distributive channels. Production of full strength orange juice and grapefruit juice doubled and tripled. Hot pack concentrated juice also rose in production. The government financed the building of two processing plants, one at Dunedin, and one at Lake Wales, for the purpose of producing the latter product. Whereas production of full strength orange juice in 1942-43 was 2,400,000 cases, in 1945-46 the figure had risen to 18,4000,0000 cases. The total crop picture also changed almost overnight. In 1941-42 the total crop amounted to 48,500,000 boxes of oranges, grapefruit and tangerines, while in 1943-44 eighty-one million boxes were harvested.

With this increase in both processed and fresh fruit production, and with the shortages of materials and supplies that exist in national emergencies, the industry's headaches multiplied. One of the major problems concerned the pricing of citrus fruits at retail. With the advent of the Office of Price Administration, and the regulations invoked by this federal agency, there were many problems to cope with. Under maximum Price Regulation 292, which was issued ostensibly to insure adequate returns to the grower for his fruit, the industry realized that it would not be able to operate properly due to the incorrect pricing structure imposed by this regulation. The Florida Citrus Commission as a leading representative of the industry, joined in the move to correct the inequities in the order.

This is the second of a series of articles relative to the Florida Citrus Commission. The third and final article will appear in the July issue of this publication.

Many meetings were held with government officials in Washington to correct irregularities and inequities that existed in the emergency measures that were hurriedly prepared. In order to properly represent the industry, it was necessary for the Commission to maintain a full time representative in Washington. In addition, it was important that personnel and members of the Commission make frequent trips to the nation's capitol.

The Commission worked very closely with other Florida citrus industry groups in all negotiations. In addition, there was excellent cooperation obtained between Florida and other citrus producing areas. On more than one occasion, government officials expressed the hope that other industries would organize and present united programs to the government along the lines followed by the citrus industry of the nation. The united programs presented by the citrus industry greatly aided the government in expediting their action on citrus programs.

During the war years, the government decided to embark upon a grapefruit juice subsidy program. Due to this program, a substantially larger pack of grapefruit juice was moved from Florida into consumer channels. The Florida Citrus Commission was a strong influence in getting this program instituted on a sound basis. Under the subsidy program, the canners would pay up to $1.63 per box of fruit delivered to canning plants. The subsidy paid each month was based on the difference in the processing price of $1.04 per box and the industry average price each month. For example, if the industry average was $1.50 per box, a subsidy was paid canners based on 46 cents per box and was computed in terms of cents per dozen cans of juice rather than per box of grapefruit. The industry felt that the subsidy program as originally issued forced canners to be bearish in their purchases. The Commission finally succeeded in obtaining several amendments to the program which eliminated most of the objectionable features. As a result of this program, the consumer during this period paid retail prices based on a canner ceiling price of $1.12½ per dozen No. 2 cans of juice, while growers received prices for their fruit which would have justified a canner's ceiling price as high as $1.41 per dozen. The difference of course, was covered by the subsidy. If the government had raised the ceiling price for grapefruit juice at the civilian sales level, it is doubtful if the canners would have disposed of as large a pack at prices which would have returned as much to the growers as they received under the subsidy program, which was initiated after many conferences between the War Food Administration, the Commodity Credit Corporation, and industry leaders, including Commission officials.

At the outset of the 1943-44 season, the War Production Board issued an order limiting the pack of orange and blended juice to 42 and 60 percent respectively of the 1941-42 pack, and required canners to set aside the entire quantities for government purchase. Tin for grapefruit juice was unlimited; however, under the subsidy program later approved, subsidy payments were limited to 90 percent of the previous year's pack. Shortly after the first of January 1944, the WPB tin order was amended to limit the orange and blended juice packs 75 to 145 percent respectively of the 1941-42 packs. The quantities reserved for the government under the revised orders were increased, but a substantial volume of both orange and blended juice was permitted to be sold for civilian consumption. The set aside percentage for grape-

(Continued on page 11)

Research Priorities Recommended By Citrus Fruit Advisory Committee

Calling for a steadily increasing agricultural research program to provide for future food supply requirements of the Nation, the RMA Citrus Fruit Advisory Committee has submitted a list of research problems to the U. S. Department of Agriculture that it recommends for first attention.

The recommendations culminate an extensive review of research and related service activities now being carried on, and an inspection of both State and Federal establishments for citrus research at different places in Florida, where the annual meeting was held March 24-27.

Inspections were made of the U. S. Citrus Products Laboratory at Winter Haven, Fla., and the U. S. Horticultural Field Laboratory at Orlando, and visits were made to the Florida Experiment Station at Lake Alfred and the University of Florida at Gainesville. Members of the committee represent growers, processors, and other segments of the citrus industry from all major citrus fruit areas.

The Committee recommendation for increased research was adopted unanimously, and it calls for increases in both Federal and State programs. More and better research is imperative in production, utilization, and marketing, the Committee stated, if the present high standard of living is to be maintained for the rapidly growing population.

A companion recommendation urges that more emphasis be put on fundamental or basic studies because future progress in applied research depends upon a reservoir of basic information from which the applications may be developed. The Committee warns: "We mustn't become bankrupt in the basic information department."

Production research problems are the most important at this time, the group agreed, then marketing, and finally processing utilization and consumer needs and uses.

The Committee operates under the Research and Marketing Act of 1946 and advises the research agencies of the Department on citrus fruit problems through its connection with the Agricultural Research Administration.

Highlights of specific recommendations in **production** are as follows: First priority for any new funds that may become available is given to studies of diseases and root stocks, with special emphasis on the control of the various tree-decline diseases. Of equal importance to the industry is the continuation and expansion of the work on citrus blackfly, fruit flies, scale and natural enemies of all insects attacking citrus.

Marketing recommendations are divided into two groups. In the group of highest priority is the work on consumer purchases and retail store availability; demand and pricing mechanisms; foreign production, competition, and demand; transportation equipment and services; quality preservation in marketing channels; cost and efficiency studies of specific marketing functions; Extension Service work in marketing; improving crop estimates; and consumer preference studies.

Processing **utilization** recommendations give top priority to work on the improvement and maintenance of quality with the development of new uses for citrus and citrus products as food. By-product and residue utilization and waste disposal are given second and third priority.

In the broad field of consumer needs and uses, the work on nutrients in foods is rated as most important, with development of institutional recipes given second priority, and food consumption studies third priority.

Members of the committee present were: F. R. Wilcox (chairman), Sunkist Growers, Inc., Los Angeles, Calif.; Stanley B. Crockett, Harlingen, Tex.; L. S. Hamme, Texsun Citrus Exchange, Weslaco, Tex.; Raymond D. Robinson, Dr. P. Phillips Companies, Orlando. Fla.; Charles A. Rogers, Chas. A. Rogers & Sons, Weslaco, Tex.; Robbins Russel, Mutual Orange Distributors, Redlands, Calif.; A. Vernon Saurman (vice-chairman), The Florida Citrus Mutual, Lakeland, Fla.; Virgil H. Tyler, Ventura Coastal Lemon Co., Ventura, Calif. Three members were unable to be present. They are N. L. Allen, American National Cooperative Exchange, Inc., New York, N. Y.; R. J. Matheison, Easwest Produce Company Division of Safeway Stores, Inc., Oakland, Calif.; and J. J. Parrish, Jr., Nevins Fruit Company, Inc., Titusville, Fla. Roy Magruder of the Agricultural Research Administration is executive secretary.

TO PLANT INDIGO

Live Oak, Florida.—Suwanee county farmers are planning to plant hairy indigo after their corn crop is laid by this year. County Agent Floyd Eubanks says he expects more than a third of the county's farmers to plant this cover crop.

THE STORY OF THE FLORIDA CITRUS COMMISSION

(Continued from page 9)

fruit juice was increased from 32 to 38 percent, and later to 41 percent.

The Crop Reporting Board increased its estimates of the production of oranges and grapefruit practically every month after the original estimates were issued and it soom became evident that additional tin for orange and blended juices would be required to prevent a substantial loss of fruit and ruinous prices to growers. The Commission, in cooperation wtih the Growers Administrative Committee, presented a strong plea to the War Production Board and War Food Administration for unlimited tin for orange and blended juice. This was finally granted the latter part of February and it later proved to be of great assistance to the industry in disposing of the record crop of oranges and grapefruit. In addition, the Commission prevailed upon the government agencies to approve applications for additional tin (in excess of 90 percent of the previous year's pack) under the grapefruit subsidy. Had it not been for these increases in tinplate allotments, a substantial part of the grapefruit and orange production may have been lost.

The ration point system used extensively during the war also came in for special work on the part of Commission personnel. In the Spring of 1944, when it appeared, that in view of the large increases in the estimates of production and the consequent increases in the packs of the various juices, together with the prospects for larger crops in 1944-45, that citrus juices should be point free in order to insure that there would be no carryover at the beginning of the next season, representatives of the Commission presented the matter to OPA officials in Washington. Resolutions were presented by the OPA and the Growers Administrative Committee and the beginning of the following month, points were removed on all citrus juices.

Because of the war, and the resulting shortage of civilian manpower, labor supply and wage rates became major problems of importance in the industry. In the summer of 1943, the Commission assumed the initiative in obtaining changes that were badly needed in the wage rate structure for packinghouse employes. At a meeting held on August 30, 1943, of a Joint Industry Committee, approximately 100 packinghouse employers were present and voted unanimously for the development of an industry petititon to the War Labor Board for the establishment of a scale of permissive maximum wage rates for packinghouse labor. An Industry Wage Rate Committee was appointed to develop the proposed petition. A study of the wage rate situation had revealed many inequities which seriously affected the labor supply problem. It appeared hopeless to attempt to correct these inequities and get approval of wage rate increases by petitions of individual employers.

After obtaining authority from most of the shippers to represent them in the mattter, the Commission in cooperation with the United Growers and Shippers Association, prepared a petition and submitted it to the War Labor Board at Atlanta. On November 19, the War Labor Board issued an order giving the industry the wage rate schedule requested and the Commission issued a bulletin fully explaining the order to the citrus shipper. This order went far toward eliminating the inequities that

had existed and stabilizing the supply of labor.

In October 1943, representatives of the Commission discussed with officials of WFA in Washington, the possibility of establishing maximum wage rates for citrus fruit pickers loaders. As a result the Florida Agricultural Wage Stabilization Board was created and public hearings were held early in November to permit employers and employes to present testimony and evidence on maximum wage rates and whether such rates should be established in Florida for harvesting citrus fruits. The final outcome was that such rates were established and at a joinnt meeting of the Commission and the Wage Stabilization Board with the industry, growers and shippers were unanimous in their praise for the work of the Board and the substantial benefits to the citrus industry. It preventing the pirating of pickers and loaders which has been so common in the previous season.

In this article, we have gone into great detail on several of the problems which faced the citrus industry of Florida during the war years. In this way, it is hoped that it may be realized to some extent the many complications which arise to confront an industry when emergencies make it necessary to regiment the operations of the industry.

One of the main activities of the Florida Citrus Commission as we see it today, that of advertising and promoting the movement of Florida citrus fruit and processed products into consumer channels, was largely confined during the war years to an institutional type program, stressing the health values of citrus in keeping the nation at peak vitality for the war endeavor. In fact, during the war period, a large reserve of advertising funds was gathered for use during the years following the end of the war to move the large crops expected. Practically, in a large measure, the activities of the Commission centered on smoothing out the difficulties which arose from the wartime restrictions in order to prevent paralyzing shutdowns in industry operations.

As the war progressed to its ultimate end, the Florida citrus industry continued to meet the problems which arose, many solutions coming through the efforts of the Florida Citrus Commission, working with other groups.

In the next and final chapter of this 'Story of the Florida Citrus Commission," the role the Commission played in the developments within the industry from the end of the war up to the present time will be outlined.

FLORIDA CITRUS MUTUAL

(Continued from page 7)

All publicity outlets are used for this, including a weekly Newsletter which has been developed during the past two years for this specific purpose.

Probably the most important of all of Mutual's informational activities is the issuance late each afternoon of a daily market information bulletin giving a resume of the day's activities on the part of Florida fresh fruit shippers, including F.O.B. prices, volume shipped and reports on the market situation in the big fruit terminals.

Shippers say frankly this is one of the most valued and helpful things they get in their effort to appraise the marketing situation on a day-to-day basis. Through it, Mutual is able to wave a red flag when shipments seem to be getting out of line with demand. It also enables Mutual's experienced fresh fruit market analysts to broadcast warnings when top-heavy supplies to the auction markets threaten the price structure.

Yet, as has been mentioned before, there is no way of putting a specific dollars and cents value on this kind of service. Mutual provides it, however, because only by keeping the price of fruit sold in the fresh fruit market at a reasonable level can the grower get the return to which he is entitled.

Mutual's programs to space the shipment of fruit into the fresh market are another example of its money-making activities. These are usually conducted on a voluntary basis and are designed to keep supplies in line with existing demand. It takes only one extra car of fruit in a terminal market to break the price on all the fruit in that market at that particular time.

One of the most important functions which Mutual performs for the industry, and again it is one of those things on which no one can put a specific value in terms of dollars, is providing the means by which shippers, processors and cash buyers can get together around the table and discuss the problems of the moment.

Mutual does this principally through its Advisory Committee, which has 26 members, all of them prominent in one phase or another of the citrus business. Mutual itself represents the growers at such discussions.

It was not too long ago that each industry group operated with little or no thought of what was happening to the others. Growers who sold for cash cared little what happened to their fruit once they had a check for it.

Today, growers are giving more time and attention to marketing problems than they ever have, because they realize that the shipper, processor or cash buyer who purchases a crop must sell that crop at a reasonable profit in order to stay in business. And there will be crops next season and the season and the season after that and for years to come.

Growers of early fruit this season certainly should be thankful Mutual was around. Its floor price on this variety held and the Hamlin and Parson Brown grower was able to sell his fruit at $1 a box delivered to processing plants. Many well-informed persons are convinced without Mutual's help, these early oranges would have brought far less, because all the conditions which usually result in low prices were present.

It is true that Mutual finally had to suspend its floor on midstream oranges, but this was caused by a set of circumstances over which Mutual had absolutely no control and could not have been foreseen. Regulations of the Office of Price Stabilization, undercutting of quotations by two processors and other things all contributed to forcing Mutual to suspend the floor.

Whether or not Mutual ever uses floor prices again, and/this is always

a highly dangerous practice, it can be truthfully said that Mutual so far has used such prices to their maximum advantage for the grower.

Fresh fruit shippers have been high in their praise of the way Mutual's floor prices on their product have operated this season. Set at $2.15 a box for interior oranges, practically any shipper will admit that without this prop FOB prices probably would have sunk to $1.75 at times. The Mutual floor has given fresh sales managers something to lean against in their negotiations with buyers and while a few reports of chiseling have been heard from time to time, all in all the floor has held and has made a lot of money for the grower whose fruit went to market in fresh form.

Again, it must be repeated that it is impossible to put a specific dollar and cents value to the things which mutual has done. But there are many folks who say openly that without Mutual and its bolstering efforts this season, oranges would have brought what grapefruit did and grapefruit would have brought nothing at all.

Some Mutual operations are aimed at the future, such as its program to have thousands of dispensers placed in operation for selling more Florida citrus juice. It is also trying to develop a program to prfy open the beverage field, believed to provide an almost unlimited potential outlet once it can be cracked.

Mutual also provides the vehicle through which 7,000 growers can speak with one voice and when that many folks are represented, the voice becomes a strong and insistent one. It has not hestitated to speak for its members whenever necessary, even though the subject may be a controversial one. An example of this was Mutual's all-out effort to prevent suspension of the marketing agreement regulations, under which the kind and size of fruit shipped to the fresh market is controlled.

Mutual's board took a definite and firm stand on that issue, even though there were some Mutual members undoubtedly who were on the other side of the fence. This effort, coupled with what others did in the same cause, was successful, too.

Only some of the things which Mutual has done can be enumerated here, but there can be no doubt but what these activities have made money and, what is almost as important, have brought the various parts of the industry more closely together.

The tighter the industry as an industry can be welded together, the more efficient will be its operation and the more money everybody will make.

That, in the long run, is what Mutual is trying to do.

EFFECT OF VARIOUS TREATMENTS OF DECAY IN TANGERINES

(Continued from page 6)

pregnated in crate liners or fiberboard cartons.

Commercially graded U. S. 1 tangerines were packed naked and stored in both wirebound crates and in cartons treated with Phenodor X (dipheynl) treated cartons for one and two weeks at both 50° and 38° F. At the end of the storage period the test lots were transferred to a 70° holding room where the fruit was inspected, the original packages discarded and the test fruit reinspected three and seven days later.

There was not enough rind breakdown in any of the lots to be of commercial significance.

The amount of decay differs but little between fruit packed in untreated crates and that packed in diphenyl-treated fiberboard cartons stored at the same temperature. As an example, after one week at 50° F., there was 6.5 percent decay in the untreated lot and 6.4 percent in the phenodor-treated carton. After three days at 70° rots had increased to 16.4 percent and 16.48 percent respectively, and four days later all rots had risen to 32.8 percent and 36.5 percent. Two weeks storage at 50° resulted in excessively high decay in both treated and untreated packages. Storage at 38° was effective in keeping decay in check, and the fruit from this temperature had much less decay 3 days after removal than that stored at 50° F. After a week at 80° decay was so great in both lots to make them practically worthless. The phenodor box had no effect on decay development either during storage or after removal.

Effect of Ventilated and Non-Ventilated Cartons On Decay

A series of five tests was made to compare the amount of decay developing in commercially graded U.S. No. 1 tangerines in wirebound crates and ventilated and non-ventilated diphenyl treated cartons. The ventilated phenodor cartons, had 36 half - inch perforations uniformly spaced in the ends and sides. The test lots were stored for two weeks

at 50°F., inspected and transferred to crates in a 70° room after discarding the original container and they were re-inspected three and seven days later. Rind breakdown was not affected by the treatments. Practically all of the decay found at the first and second inspection and most of it at the third inspection, was caused by green mold although stem-end rot was beginning to show up in quantity at the final inspection. In the wirebound crates there was 11.6 percent decay at the first inspection; 17.7 percent decay three days later; and 31.7 percent four days after the second inspection.

In the non-perforated phenodor cartons there was 13.7 percent, 22.3 and 48.8 percent decay at the first, second, and third inspections respectively.

The least amount of rot, viz. 9.2 percent, 13.9 percent, and 26.8 percent on the three successive inspection dates, was found in the lots stored in perforated phenodor cartons. The amount of decay in the perforated cartons was consistently less than in the non-perforated cartons in each of the five tests.

Effect of Water-Soluble Decay Inhibitors on Rind Breakdown, Chemical Injury and Decay

Water-soluble decay inhibitors have been in use on citrus fruits close to half a century with varying success on the different kinds of decay.

During January and February, 1951, a comparison was made of two easily applied water-soluble decay inhibitors, viz. "Steriseal", a proprietary compound, and Dowicide A (sodium o-phenylphenate) plus hexamine. The treated fruit was packed in two ways —in wooden crates without diphenyl and in diphenyl-treated fiberboard cartons. "Steriseal" was used at a concentration of 1 part to 19 parts of water, whereas, Dowicide A plus hexamine was used at the rate of 2 percent Dowicide A and 1 percent hexamine.

Solutions of both the "Steriseal" and the Dowicide A—hexamine mixtures were applied for two minutes at room temperature. The treated fruit was allowed to dry without rinsing and was then placed in wooden crates or diphenl-treated cartons and held for three weeks at 70° F. with inspections made weekly. The cartons were discarded after the first inspection and the fruit placed in wooden crates. Since less than 1 percent rind breakdown was observed at both the first or second inspections, it seems safe to conclude that the treatments caused but little if any rind injury.

As in the other tests, a large proportion of the decay that developed within two weeks after treatment was caused by green mold.)

In the untreated checks there was 16.7 percent decay after one week, 30.8 percent after two weeks and 52.0 percent after three weeks.

Steriseal held decay to about one-half that occurring in the checks at each of the three inspections. The Dowicide-hexamine mixture was even more effective in reducing decay than Steriseal.

The use of phenodor cartons with Dowicide-hexamine treated fruit did not further reduce decay. The percentagewise control from both Steriseal and Dowicide plus hexamine decreased during the holding period, yet the two water-soluble compounds gave sufficient control to warrant their use.

Decay Inhibitors in Wax Emulsions

Previous publications have shown that decay inhibitors such as 2-Amino-Pyridine and Dowicide A, when incorporated in the water phase of wax emulsion, are effective in checking decay in citrus fruits. Doubtless there are other decay inhibitors that can be applied in that manner.

Stine wax, a proprietary wax emulsion containing an undesignated decay inhibitor, was used on tangerines and oranges commercially during the season 1949-50. The decay retarding properties of this product were tested on tangerines and oranges. The oranges were included in these tests for the purpose of throwing light on the general citrus decay problem.

The fruit was collected at two points in the packinghouse processing line between the washer and drier:

1. Just before the washed fruit reached the dip tank containing the wax emulsion, and
2. Immediately after the fruit emerged from this treating tank.

Samples of fruit from nine groves were taken over a period of two weeks in December. The test lots were brought to the laboratory at Orlando, held at 70° for three weeks and inspected at intervals of seven days.

The results indicate that the wax treatment slightly increased rind breakdown in all lots of fruit. The results further indicate that the decay inhibitor incorporated in this wax emulsion had little if any effect on either stem-end rot or green mold in either tangerines or oranges. It appears from these results that the unnamed decay inhibitor in Stine Wax emulsion is of little value against stem-end rot and green mold of tangerine and oranges.

(Second Installment Next Month)

Notes Of The Trade...

Patent No. 2,589,418, issued by the U. S. Patent Office to Harold T. Lannen and Earl R. Odom, both of Duarte, California, may foreshadow a complete change in citrus fruit processing and packing. The patent covers a vacuum extraction process entirely new in the citrus industry, according to the inventors.

Processing equipment now in use in the industry, say the inventors, permits infiltration into the juice of considerable quantities of air and varying amounts of peel-oil.

With their vacuum extraction process, the inventors say, the juice never comes into contact with the air, and a special reaming-control device permits the extraction of all the juice (10% to 15% more than is presently obtained) without danger of peel-oil entering the juice.

Unloading Charges Ordered Reduced

The long drawn out unloading charge case, New York and Philadelphia, I. & S. 5500, has at least temporarily come to rest as a result of a decision by the Interstate Commerce Commission of May 7th, released May 23rd, 1952, in which the Commission finds that the present charges of $1.95 for unloading fresh citrus fruits and $2.60 for top iced vegetables per ton are not just and reasonable and orders those schedules cancelled without prejudice to the adjustment of charges not higher than $1.05 per ton on fresh citrus fruit and $1.65 per ton on top iced vegetables.

"Sell Citrus By The Pound F.O.B."--- Increase Industry Returns---Roper

In a statement issued from the offices of United Growers & Shippers Association Mr. Frank Roper, Co-Chairman of the "Sell-'Em-By-The-Pound" Committee and Florida Citrus Commission Member said: "I have just received a report that the experiments with the jumble pack have been successful to date and the trade is well pleased with this method of ordering and handling Florida oranges. I believe we will eventually sell a great part of our fruit by the pound on an F.O.B. basis."

He further stated: "The pound selling campaign in Memphis is bringing forth a considerable amount of valuable information. For one thing, it is enabling us to put three to four sizes in a bruce box and sell them by the pound."

Several weeks ago Bob Rutledge of United Growers & Shippers was in the Memphis market to observe at firsthand the results of the campaign. He said: "I expect to return to Memphis in order to gather more information and as many case histories on pound selling as possible. This will enable us to factually present the advantages of pound selling into other markets. Results so far indicate a wide variance in the increase in volume. However, one of the main advantages of pound selling will result in the discontinuance of size discount practices."

Mr. Roper went on to say: "I am confident that the results of the Memphis test will be gratifying to the growers and shippers of Florida. We as growers do not realize the amount of money we are losing each year because of discount on sizes. It is a known fact that small oranges sold by the pound realize the grower the same net as the so-called chosen sizes. It will be a tremendous job job to sell the advantages of pound selling to the trade and to our consumers, but we must let them know that regardless of size or variety Florida oranges will give at least 7 ounces of juice per pound. Also, we must emphasize the contrast in price of our fruit by the pound with other items in the thousands of produce markets throughout the country."

Twenty-five pieces of furniture were refinished by Seminole County home demonstration club women during the past month, according to Miss Lila Woodard, home agent.

NEW RESEARCH FACTS FROM TANGERINE SHIPPING STUDIES

Tangerines, easily bruised in handling and especially subject to decay during the shipping and selling period, now may have a greater market life expectancy as a result of tests by the U. S. Department of Agriculture. In their investigations the specialists on handling, transportation and storage of horticultural crops had the cooperation of Florida citrus producers, and of packers and shippers, transportation companies and others in observing shipments of the fruit under various conditions from Florida to the West Coast and to New York City.

In a detailed report on the research, J. R. Winston, Howard Hruschka and Randall Cubbedge of Plant Industry, Soils and Agricultural Engineering concluded that after the tangerines arrive at the market, the receiver has about three days in which to dispose of his fruit before decay loss becomes excessive. (Studies of means of lengthering this period —use of refrigerated display racks for example—will be reported on soon.)

Precooled tangerines shipped in fan cars (cars equipped with fans which circulate the cool air) under standard refrigeration as far as Seattle and Los Angeles, arrived in sound condition after being 10 to 14 days in transit. Both precooled and non-precooled tangerines in fan cars under standard refrigeration reached New York from Orlando, Fla., (about 1/3 the distance to the West Coast) in good shape. Decay developed rapidly in all lots during the week after they were unloaded.

Practically no beneficial effect of low transit temperatures remained a week after any of the shipments were unloaded.

Antiseptics applied to tangerines during the washing process retarded decay for a week or two after application.

The LYONIZER

Department

COMPILED BY THE LYONS FERTILIZER COMPANY

Reports Of Our Field Men . . .

POLK & HIGHLANDS COUNTIES

By J. T. Griffiths and J. K. Enzor, Jr.

Rains fell on the week-end of May 11 in scattered areas in Polk County, and on May 18 and 19, general rains descended. Although many growers have been irrigating during the month of May almost all irrigation had stopped by May 21.

Fruit drop has been common throughout Polk County. In almost all of the instances this has been considered to be a normal drop and due primarily to a heavy set of fruit following a heavy bloom. Fruit on the ground will often measure 1 inch in diameter, but a satisfactory crop remains in most groves. Many grapefruit groves will have a light crop unless a June or July bloom occurs.

It is obvious that purple scale will be a major problem this year. Growers who did not apply sprays for scale control at post-bloom time in heavily infested groves will probably find it difficult to obtain satisfactory control with a single spray. The best scale control will be obtained by applying sprays between June 20 and July 15. Optimum times may be worked out in relation to scale crawler activity.

Rust mite infestations have materially increased during May. Many groves will require a sulfur application in early June. Where rain fall is plentiful, oil sprays may follow sulfur within a week or 10 days.

PASCO AND EAST HILLSBOROUGH COUNTIES

E. A. McCartney

There have been some spotty rains the past week which were badly needed, but it is very dry as a rule.

Irrigating is being done by the growers who are equipped to do so. We are in the middle of the summer fertilizer application which will run through June. Groves are in good shape generally although there has been a heavy dropping of young fruit.

The Red Spider seems to be under control but there is considerable scale which will have to be taken care of with an oil spray, and most growers are making plans to spray.

PINELLAS COUNTY

T. D. Watson

Conditions are much more favorable due to some scattered showers throughout the territory.

Most all growers have been irrigating but will start applying fertilizer when adequate moisture is in the soil. Some groves suffered considerably after having ideal moisture throughout the early spring and then extreme drought caused defoliating to a certain extent.

Watermelons have started moving and are bringing a fairly good price up to this date. The recent rains will delay cutting a few days due to immediate extra growth. The overall picture looks fairly good at this stage of the deal.

SOUTHWEST FLORIDA

Eaves Allison

Conditions are getting pretty dry in this area as it has been about a month since we had a good rain. Citrus groves are right dusty and irrigation plants are running in some sections.

In spite of rough going this whole spring the vegetable growers have made some money. Prices have remained firm and the season will wind up with a profit—a hard earned one. Crops should be picked out by the end of May. Most of the earliest tomatoe and cuke fields have already given up the ghost at this writing—May 17th.

WEST CENTRAL FLORIDA

J. E. Mickler

Despite the past season of unreliable prices, most growers in this section have been engaged this month in winding up the Summer application of fertilizer. Thus they have rounded out the program for the year, and those groves that have received that care will reflect that final push in the long run.

Belated rains let those equipped for irrigation take a welcome rest, and those with no watering system heaved audible sighs of relief.

Tomatoes started weak in price, low in volume, very good in quality. Prices are now upward in trend. A few cars of melons have rolled and good prices have been received. Weather conditions slowed the melon shipments, but from now on the extra acreage planted will reflect in heavy shipments. Congoes seem to be the first out around Sumpter County.

Those pasture men that have not fertilized should lay plans as soon as possible for an adequate application.

NORTH CENTRAL FLORIDA

V. E. Bourland

Weather has been windy and dry, there is quite a bit of irrigation going on in groves, also in melon and cucumber fields, but we had a very good rain in this section Saturday, May 17, which was very welcome by every one. Different insects have been very bad in groves, most growers have been busy spraying and dusting. It still looks like we are going to have a good crop of fruit although a lot of the new crop is going on the ground.

Cucumbers in this section are looking very good, and growers are picking a fair yield with satisfactory price. Melon crops in most sections have suffered from wind and dry weather, but considering this, the prospect looks favorable now, and growers have started picking some.

HIGHLANDS, SO. POLK, HARDEE AND DESOTO COUNTIES

C. R. Wingfield

Local showers during the week-end of May 18th brought relief to most groves in this section. On the more thirsty soils irrigation will be continued unless they receive more rain. With moisture conditions good, our attention should be turned to the summer application of fertilizer. Many have already made this application and others will now follow in rapid succession.

The upward trend in Valencia prices have brought some encouragement to those who still have their oranges. There is hopes that it will continue for the balance of the season. The new crop, while we had a heavy bloom, looked as if we would set a heavy crop but there has been an unusual droppage of young fruit until it is uncertain at this time.

Hints For the Busy Housewife

HOME DEMONSTRATION SPECIALISTS, Tallahassee

Eggs On The Double

It's the protein foods in family meals that often pinch the purse. But this spring eggs are coming to the rescue—in a big way. The U. S. Department of Agriculture estimates that hens are laying at such a rate that there are enough eggs for everyone to have two a day. Two large eggs per person provide enough protein for the main dish of a meal. As prices are running now, you can buy two large or extra large eggs for from 8 to 10 cents. What's more, those eggs can be top quality, with a rating of AA or A. So this spring when you choose eggs, you have abundance, quality, size and price in your favor.

For a two-egg plate to take advantage of this abundance, here are some suggestions.

1. Two poached eggs served on hot Creole or Spanish rice—that is, rice cooked with tomato, onion, green pepper and seasonings to your taste.
2. Creamed eggs—halves or hard-cooked eggs in white sauce.
3. Ewo eggs baked in cheese sauce in individual casseroles.
4. Eggs benedict—two poached eggs on thinly sliced ham or toast or English muffins with Hollandaise sauce topping.
5. Hot deviled or stuffed eggs surrounded by hot tomato sauce, Spanish sauce or cheese sauce.

BAIT SPRAYS IN FRUIT FLY CONTROL

Baiting oriental and Mediterranean fruit flies to their death, rather than trying to control them with widespread insecticide spray programs, is a promising technique being developed by U. S. Department of Agriculture entomologists working to control this major insect pest in Hawaii. Neither of these two flies have reached the mainland of the U. S. but mainland citrus growers are apprehensive in case the flies should be introduced.

Scientists of the Department's Bureau of Entomology and Plant Quarantine find that applying a mixture of sugar, a powerful new bait consisting of a protein compound of soy or yeast, and a quick-acting, residual insecticide, such as parathion, to limited areas of orchard foliage provides good control of fruit flies for as long as two or three weeks. Fruit flies were attracted to bait-dipped guava tree foliage from distances of 50 feet or more.

In the tests on semi-isolated wild guava growth, fruit fly larva numbers were reduced an average of 87 to 94 percent by bait-sprays applied with a mist blower at intervals of three weeks, while over-all applications of a conventional dilute DDT spray reduced infestations 82 percent. Only 3 to 4 ounces of actual parathion were required for treating an acre with the bait-spray. One and one-half pounds of actual DDT, in large volumes of water, were needed to completely treat an acre with the residual insecticide. Cost of the bait-spray was less than $1 a week for each acre protected.

The fact that such good control was achieved with only small amounts of actual insecticide, makes entomologists believe that bait-spraying may prove especially valuable for large scale fruit fly control operations.

They point out, too, that complete coverage is much less essential when bait-sprays are used, because the fruit flies can be counted on to seek out the spray.

Further research may determine if fruit flies can be controlled by applying the bait-spray to only non-fruiting acreas of the host plant. If such proves possible the parasites of the fruit flies will have greater chance of surviving insecticide applications. In their limited studies, the entomologists found that infesting of fruit fly larvae with parasites in plantings sprayed with DDT averaged only 42 percent as compared with 76 percent where the bait-spray was used, and 62 percent in untreated areas.

Lafayette County farmers have fertilized their Pensacola Bahia grass pastures heavier than usual this year in efforts to obtain a good crop of seed, according to County Agent S. L. Brothers.

GROVELAND CANNING PLANT ANNOUNCES EXPANSION PROGRAM

According to E. C. Busbee, president, the Board of Directors of the B & W Canning Company, Groveland, has authorized an expansion program for this summer that will more than double the Plant's facilities for the manufacture of frozen concentrated orange juice. Additional evaporators, concentrating and freezing equipment is bein installed that will boost production of frozen concentrates to nearly 3 million gallons.

Ground has been broken and construction commenced on another large cold-storage warehouse that will give the Company twice its present storage capacity.

The program also includes erection of new fruit holding bins, better unloading facilities on the yard, and installation of a 100,000 gallon water tank for better fire protection.

LEE COUNTY MANGO CROP

Lee County's mango crop is maturing, and harvesting is expected to get under way early this month. The crop is expected to be normal and of good quality, County Agent C. P. Heuck reports.

Many Polk County home-makers are making baskets since Mrs. Cinnie M. Carlton, home agent, gave demonstrations on basket-making at recent club meetings.

CLASSIFIED ADS

Feature On Indian River Shade-Grown Citrus

A 2,300 acre umbrella which blots out the hot Florida sunshine, has created a shade-grown citrus crop and a highly profitable business venture for a large growing organization here.

It took more than two score years for the Mims Citrus Growers Association to realize a two-fold objective—the growing of tall cabbage palm trees as a protective umbrella over lush Indian River citrus trees. The production of shade-protected citrus has proved lucrative although much extra labor and effort is involved.

Stretching along the rich Indian River shores in the Titusville-Mims-Oak Hill section, is what historically has been called Turnbull Hammock. This region, believed to have been settled by Andrew Turnbull in 1767, has a peculiar Marl or calcareous rock deposit about two feet below the soil surface.

Growers in the big Mims cooperative many years ago decided to capitalize on this unusual soil formation. Cabbage palms, which thrive in such soil, were planted as a safeguard against strong winds and frost. Areas where palms were already growing in abundance were found to be five degrees warmer than surrounding plots.

But when the cabbage trees attained full growth, they dimmed the sun's strong rays and a shade-grown citrus crop took hold. The orange and grapefruit groves covering 2,300 acres in the Hammock, are planted in the orthodox manner except that big cabbage palms dot the limited space down the middles.

The Mims Association acreage is composed of small groves, usually of five to ten acres. They produce in the neighborhood of 300,000 boxes of which, about 30 per cent are in grapefruit.

But shade-grown production presented other problems. The closeness of citrus trees to the cabbage palms made it an almost hand operation throughout.

According to C. Frank Flake, manager of the Mims CGA, there is nothing like the personal touch for bringing premium prices. Instead of mass picking operations during which citrus is stacked high in goat trucks and hauled to the packing house, the fruit is carefully picked on a limited scale and loaded into midget trailers drawn by small tractors.

"It's a funny sight to see these little rigs crawling around between the trees and bringing the fruit out to the main roads where it is loaded into larger trucks," Flake remarked. "Some of the groves are so crowded a person can hardly turn around in them."

But out of these highly populated groves come some of the finest fruit bearing the Indian River name. Although technical reasons for it are unknown to the Mims manager, he believes the lack of sunshine adds something to the juiciness and rich flavor of the fruit.

The hand operation, however, is not limited to only harvesting. Large speed sprayers are out, as far as the Mims CGA groves are concerned. Only hand sprayer outfits are used. Cultivation, Flake said, is also a personal chore.